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Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	October 9, 2011	Incident type: breakdown/ upset/startup or shutdown	Upset
Start Date	October 9, 2011	Start Time:	2:00 AM
End Date	October 10, 2011	End Time:	2:00 AM
Process unit or system(s): SRU3			

Incident Description

On October 8 at approximately 6:50 PM the SRU3 tripped out while feed was being put into the unit. The unit had been in hot-standby, with no feed in the unit, while the refinery was in a maintenance turnaround and the AAG production was low. During the turnaround all the AAG feed was routed to SRU4. The high SO₂ on SRU3 occurred when the TGTU1 tripped due to high bed temps, causing the absorber gas flow to be diverted directly to the Incinerator. The high bed temperatures were the result of O₂ being introduced into the system during startup. The upset continued when the Primary Incinerator tripped off-line because of low combustion air pressure. Operations was unable to immediately re-light the Incinerator due to a problem with the PLC. I&E technicians performed troubleshooting in the system and found a blown fuse in the PLC, which was immediately replaced. The incinerator was then re-lit and feed was brought into the unit without issue.

Amine Acid Gas (AAG) was flared for about 2-mins, resulting in about 7 lbs of excess SO₂ emissions (most of AAG was recovered by FGR). The 1000-ppm limit was not exceeded. The 12-hour rolling average SO₂ reading was high from Oct 9 2AM until Oct 10 2AM.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

After the trip, AAG was taken out of SRU3 and was routed to SRU4.

Applicable air operating permit term(s): 5.8.15

Estimated Excess Emissions: Based on SO ₂ CEMS and calculated stack flow	Pollutant(s): SO ₂	Pounds (Estimate): 94 (includes 7 lbs from flaring)
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The incident was the result of the following (check all that apply):

- ☒ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☐ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

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Did the incident result in the violation of an ambient air quality standard



No



Yes (provide details below)

Root and other contributing causes of incident:

Blown fuse in the incinerator PLC.

The root cause of the incident was:

(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))



Identified for the first time



Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?



No



Yes (describe below)

A fuse had blown in the PLC that prevented immediate unit start. This type of failure has never occurred before and was unexpected. This failure was not easily identifiable as it required 7-hours of technician time to find the problem.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2

Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The fuse was immediately replaced.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing?



No



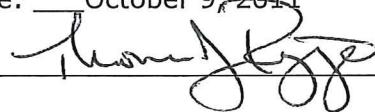
Yes

Is the source requesting additional time for completion of the report? ☒ No ☐ Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Mike Evans _ Date: _ October 9, 2011 _

Responsible Official or Designee: _____



Date: 11/28/11